2: Barrett E-5 (no date) 1917 NT20 Washo NT20

101 combined with the peculiar natural environment, has produced a material culture which contains many features of both these areas and which shows certain interesting local adaptations and modifications.

ENVIRONMENT.

131 The Washo territory lies partly on the western margin of the
133 arid, Great Basin region of Nevada, and partly on the more densely wooded eastern slope of the Sierra Nevada. It also extends up into the heavily timbered and well watered high Sierra region and even, in a small area on the headwaters of the Moquelumne, Calaveras, and Stanislaus rivers, reaches down for some distance on the western slope of this range.* Its western limit can, however, in general be stated as the crest of the Sierra Nevada range. Its eastern limit is, generally speaking, the low range between the Carson river and the Walker river drainages. Thus the territory of the Washo lies almost entirely on the eastern slope of the Sierra Nevada, and extends out into the semi-arid eastern foothills of this range. The accompanying map shows these limits only approximately, as time did not permit a careful investigation of this subject.

133 Within this restricted territory are found two very distinct types of natural environment, each with its typical fauna and flora. The one, that of the semi-desert basin (plate II[2]); the other, that of the well timbered and well watered Sierra (plate I).[3] The latter tends to produce features characteristic of the eastern part of the California culture area. The semi-arid sands of the eastern part
137 of the Washo territory bear a flora characterized by low brush, various grasses which yield seeds used for food and, on the desert mountains, by a particular species of pine, the pifion, whose nuts constitute such an important article of food throughout much of the Great Basin culture area. The well watered mountains of the
[262]

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*See the author's "Geography and Dialects of the Miwok Indians," Univ. Calif. Publ., Am. Arch. Ethn. VI, 341 and map 3, 1908. Also Dixon's "The Northern Maidu," Bull. Amer. Mus. Nat. Hist., XVII, 135, and pl. XXXVIII, 1905.

2 [The author may be referring to plate I, fig. 2 here, see cat. 116, p. 29 - Ann.]

3 [See plate I, fig. 1, Cat. 86; p. 29 - Ann.]

2: Barrett E-5 (no date) 1917 NT20 Washo NT20

The well watered mountains of the
western part of the Washo territory produce a flora characterized 137 ●
by heavy forests of cedar, spruce, and several of the larger species 262
of pine, and in its extreme western part by the presence of the 177

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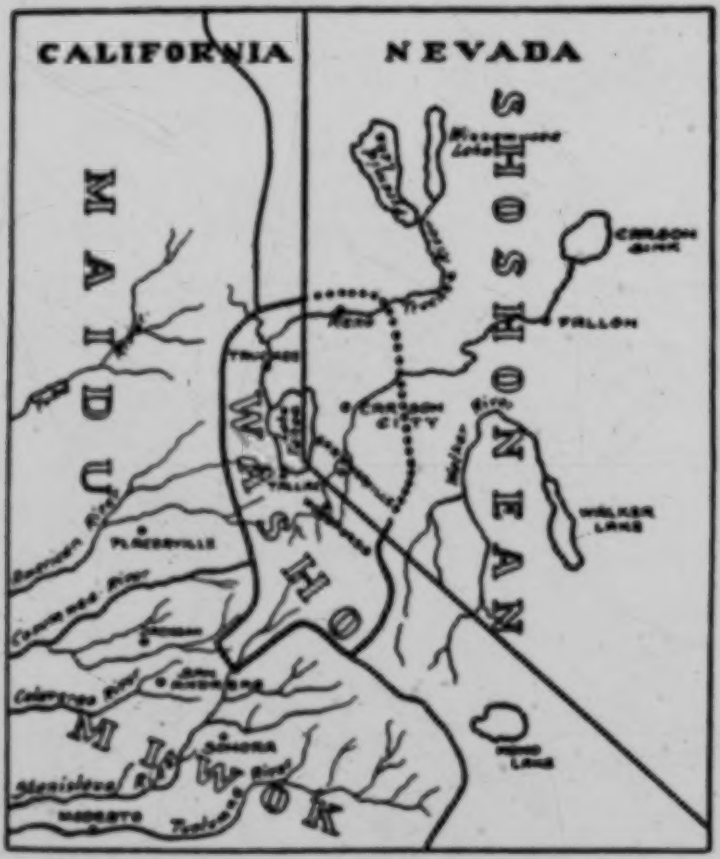

Map 1. Showing the Washo territory and that of surrounding tribes.

sequois and the oak, whose acorns are used to some extent as 137
food; thus introducing here a distinctly Californian element. 262
177

The fauna of the two sections presented, in primitive times, 136
similar differences. That of the arid region was characterized 174

2: Barrett E-5 (no date) 1917 NT20 Washo NT20

No opportunity presented itself to go into the details of hunting and fishing. There are, however, without doubt certain traps and other implements used for these purposes, which a more detailed study of the Washo culture would bring out.

Both game and fish were formerly cooked by broiling on the coals of the open fire.

THE PIÑON NUT.

Chief among the aboriginal vegetal foods is the nut of the piñon, *Pinus monophylla*, called ta'gûm, the small species of pine above mentioned. This is an exceptionally large nut and is so rich and palatable that many tons are now gathered for the market yearly by the Indians of this region. The location of the piñon forests, well up on the higher arid foothills and at considerable distances from the Washo villages, makes it necessary for the Indians to move thither during the piñon season, a period of a month or six weeks in the early autumn. Thus there are established each year at certain points in the mountains regular camps which take on a character of permanency. Here are built regular summer houses, which are repaired and used year after year, and here are stored from season to season implements, such as special baskets, wooden hooks, and other objects used in gathering the pine nuts. The ripe cones are pulled from the rather low trees by means of a hook, made by tying securely to a long pole a short stick forming an angle of about thirty degrees with the pole. These cones are gathered in a very rough, plain-twined, burden basket, darû tso'hoi, such as that shown in plate XIII, fig. 1, and brought to the camp where they are roasted until they open sufficiently to allow the nuts to be picked or shaken out. The nuts are then ready to be eaten or placed in storage. When fresh they are very oily and have a rather strong turpentine flavor. After some months they lose these qualities, and become quite sweet and mealy. This change is somewhat hastened by re-roasting the nuts after they have been extracted from the cones. They then have a flavor resembling that of roasted almonds.

[See cat. 116, P. 53 - - An.]

2: Barrett E-5 (no date) 1917 NT20 Washo NT20

252 These pine nuts may be cracked and eaten, but they are usually converted into a meal from which mush is made. They are shelled and ground to a fine flour on the boulder mortar, or sometimes on the metate. These implements are shown in plates III and IV.[1] The meal is then cooked in a basket by means of hot stones, making a food similar to the acorn mush so typical of the California area.

252 262 [137] [222] [439] As above mentioned, oaks grow in the extreme western part of the Washo area and acorns (ma'lil) were regularly gathered by the Washo in former times. Others were secured by them through trade with their western neighbors, who considered the piñon nut a delicacy as the Washo did the acorn, which was ground on the boulder mortar, as above described, and eaten in the form of mush.

A considerable variety of grass and weed seeds are used in a similar manner as food. They are parched, ground and made in the same way into mush. Pigweed seed (ta'hal), and another variety, [272] called me'tsŭm, are still used. A native tea is made from the stems of a leafless, desert plant, called me'gel.

252 [412] In cooking, especially in boiling mush as above indicated, a considerable number of stones about the size of one's fist are heated in the open fire. They are lifted by means of wooden tongs, and are first dipped into clear water to cleanse them of ashes. They are then dropped directly into the mush, which is thus made to boil and which is constantly stirred with a looped stirring stick (belĕ'yŭ), such as that shown in plate V, fig. 3. As the stones cool they are removed by means of this same implement, again dipped into water to remove the remnants of the mush which may adhere to them, and replaced in the fire to re-heat.

IMPLEMENTS OF STONE.

324 412 [171] The Washo use the flat metate or grinding stone (de'mge), and the muller (ga'mŭm), as do the Paiute and other Great Basin and Southwest desert tribes. These implements are shown in Plate IV, figs 5 and 4, respectively. The top of a conveniently situated, flat

[1] [see cat. 116, pp. 334 35. – Au.]

2: Barrett E-5 (no date) 1917 NT20 Washo NT20

BASKETRY.

285 [171] [482]

The Washo are quite justly renowned as makers of fine, coiled basketry. Certain of the Washo women make very smooth and excellent baskets and employ a great variety of designs. In many respects the basketry of the Washo closely resembles that of the Miwok to the west. Particularly is this the case with the coiled basketry. The twined basketry, on the other hand, resembles that of the Pavioţso, especially the diagonal-twined cooking basket (plate VII, fig. 2),[1] the two types of burden basket (plate XIII, figs. 3-6),[2] and the two types of winnowing basket (plate XI,[3] and plate XII,[4] figs. 1 and 2).

MATERIALS.

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The principal materials used by the Washo in basketry are derived from the willow, *Salix*, which yields both unpeeled and peeled rods. These form the only foundation materials in coiling and the hard elements in twining. The inner bark of the willow furnishes the white sewing and twining elements and, when discolored in the sun, also a brown element.

The only other basketry materials used by the Washo are the root of the bracken, *Pteridium aquilinum*, which provides a black element, and the redbud, *Cercis occidentalis*, the bark of which furnishes a red element. This is obtained from the Miwok to the west as it is not an indigenous shrub to the Washo country, and is therefore sparingly used. [439] [137]

285 192

The following tabulation gives the Washo names of these various materials:

Willow	hi'mû
Unpeeled rods	mi'mû
Peeled rods	agaiye'we
Peeled rods coiled for storage	pelesû'sûyewe
Brown sewing element	hîmû toto'coñi (literally, "willow sunburned"), also podocoñé'we, and poto'soñ

[1] [see cat. 116, p. 41 -- An.]
[2] [see cat. 116, p. 53 -- An.]
[3] [see cat. 116, p. 49 -- An.]
[4] [see cat. 116, p. 51 --

2: Barrett E-5 (no date) 1917 NT20 Washo NT20

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EXPLANATION OF PLATE I.

Figure 1. The southern shore of Lake Tahoe and the mountains to the southeast, showing the heavily timbered and well watered high Sierra region.

Figure 2. The Sierra Nevada region at Woodfords, California. This is the eastern limit of the Sierra region and near the border of the semi-desert Great Basin area.

2: Barrett E-5 (no date) 1917 NT20 Washo NT20

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[P. 29]

2: Barrett E-5 (no date) 1917 NT20 Washo NT20

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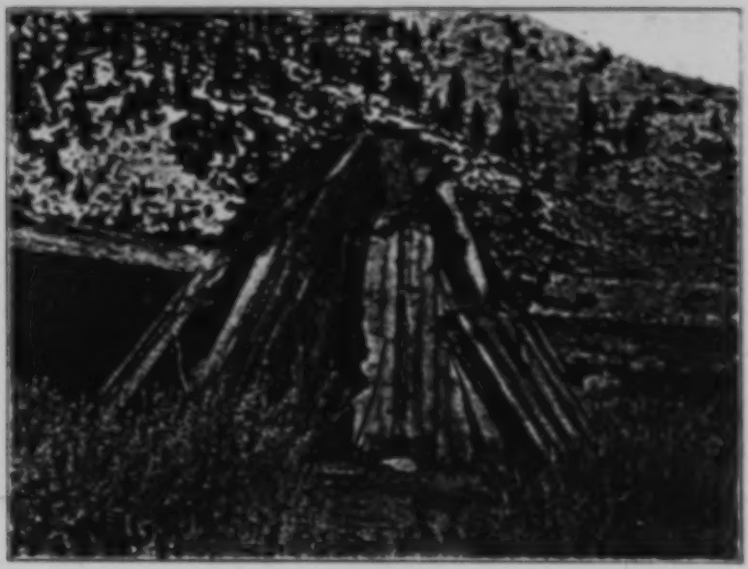

2

[P.31]

2: Barrett E-5 (no date) 1917 NT20 Washo NT20

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2

[P. 33]

The physical environment of Washo territory is marked by its variety of terrain, climate, flora, and fauna, primarily due to variations in altitude within a comparatively small area. The Sierra Nevada rises gradually to the east of the central valley of California from near sea level to peaks over 10,000 feet in altitude, then it drops abruptly on the eastern slope to about 5,000 feet. Generally the Washo lived at 4,500 to 5,500 feet in the valleys east of the Sierra Nevada; around 5,500 to 7,500 in the highlands; and their treks took them down to 3,000 feet on the west side of the Sierra. This gave them a wide range of habitats in mountain-valley terrain.

The highlands and western slopes had yellow pine, fir, and hemlock vegetation; a transitional and boreal life zone; humid mesothermal and microthermal climates; and zones receiving between 10 to 60 inches of annual precipitation. In the mountains the summers are warm, with rains through July. Snows start in November, followed by cold weather with freezing nights until April.

In the lowlands to the east of the Sierra Nevada the Washo had pinon and juniper vegetation, an upper sonoran life zone, and an arid-cold-steppe climate (Kroeber 1960, 3-6). These areas have 100-140 days of growing season and all farming requires irrigation (Department of Economic Development n.d.). The weather station at Minden, Nevada is 4,730 feet above sea level. It has recorded an annual precipitation of 8.73 inches, an average growing season of 144 days from May 29 to September 20, a high maximum temperature of 109° F. and a low maximum of -24° F.

Throughout Washo territory the average variability of annual precipitation is around 20-25%. In the months of December through February 60-70% of possible sunshine is received and the figure is 80-90% in the months of June through August.

The mountains and lakes (especially Lake Tahoe), the high percentage of sunny days, and legalized gambling in Nevada make tourism the major industry in Washo territory today. Cattle raising and dairying are the most important agrarian industries. Lumbering and mining are of minor importance (Department of Economic Development n.d.).

Compared with other tribes in the Great Basin the Washo occupied a very abundant environment. Hamilton described the Truckee River country in 1844 as "a hunter's paradise, with the streams full of fish and blue grouse in every direction" (Sieber 1951, 162). This abundance is reflected in the fact that the Washo had a higher population density than any other Great Basin tribe. Kroeber (1947, 137) gives a figure for the Washo that comes out as 2.4 square miles per person. The average population density for all of the Great Basin was roughly 15 square miles per person (Steward 1938, 46).

WASHO PREHISTORY: A REVIEW OF RESEARCH

by John A. Price

Anthropological research dealing with the Washo Indians and their aboriginal territory has produced a considerable body of descriptive data, much of it amassed in the past decade. This paper will review that portion of the data pertaining to prehistory in Washo territory.

Washo territory in the middle 1800's centered on Lake Tahoe in California and Nevada and the areas immediately to the north, east and south. Except for occasional wider ranging for gathering or trade, Washo territory extended from the south shore of Honey Lake south to Sonora Pass and the West Walker River in California. East to west their territory extended from the Pinenut Mountains in Nevada to several miles west of the main crest of the Sierra Nevada in California.

The physical environment of Washo territory is marked by its variety of climate, flora and fauna resulting from the variations in altitude which occur within a comparatively small area. The Sierra Nevada, a great tilted block, rises gradually to the east of the central valley of California from near sea level to peaks over 10,000 ft. in altitude and drops abruptly on its eastern slope in Nevada to around 5,000 ft. in elevation.

The Washo territory is characterized by yellow pine and fir vegetation in the highlands and by pinyon and juniper in the lowlands, ranging through Boreal, Transitional and Upper Sonoran life zones. A humid microthermal climate with 20 to 35 in. of precipitation annually obtains in the mountains while an arid cold-steppe climate is found in the low valleys. In the mountains the summers are warm with rains through July, snows starting in November, and cold weather with freezing nights until April. Snow often reaches more than 15 ft. in depth in some places in the mountains.

There are several estimates of Washo population. Fairfield (1916, 13-14) wrote that "In 1859 Major Dodge, the Indian Agent, reported that they number about 900"; Kroeber (1925, 944) estimated around 1500 for A.D. 1770; Lowie (1939, 301) wrote that "recent figures indicate approximately 300"; and Merriam and d'Azevedo (1957, 615) wrote that "Present population is variously reported at between 400 and 1000 individuals; the figures on file at the Nevada Indian Agency in Stewart, Nevada, support the larger estimates."

[for an additional note regarding the preparation of this paper, see p. 92 -- Analyst]

Northern Paiute NRB

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[161]

number of people living in these settlements (Mooney, 1896; Kroeber, 1925). It is at least possible that a great many Washo lived in the mountains and other areas not generally visited by white men and went unnoticed.

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The year 1857 marks the discovery of the Comstock Lode and a dramatic change in the history of Nevada and of the indigenous populations. The primary activity of the white men shifted from a rather casual form of frontier pastoralism to an intensive exploitation of the mountains for silver and gold. Mining and the servicing of mining populations became the primary occupation. The flamboyant history of the Comstock has overshadowed the other activities of white men in the area at the time. Perhaps of equal importance to the study at hand is the rapid increase of stock raising.

Angel (1958, 87) reports that 10,000 head of cattle, horses and hogs were pastured in the general western Nevada area in 1860. The poor condition of the animals and the number of carcasses seen on the range is mentioned. This would suggest that the range was subjected to rather serious overgrazing, which must have depleted the grass and brush seed food sources of the Indians, as had Mormon ranching in Utah (Steward, 1938, 14). It is probable that the Paiute suffered more from this than did the Washo.

The Humboldt and Pyramid Lake region lies largely in the Artemisian life zone, which is characterized by xerophytic plants and few grasses or other possible food sources except after relatively heavy rains, or along the margins of watercourses and lakes. Since there are three large bodies of water and three rivers in the area we can assume that the Indians drew much of their sustenance from the edges of the water. Cattle would, of course, seek out the same areas and drastically reduce the supply. Moreover, Indians report that many areas now covered with useless plants were grasslands prior to the introduction of cattle or other livestock (Steward, 1938, 17). Even light grazing in such an area would seriously deplete, if not totally destroy, the food sources of the area. It is obvious that Indians occupying the area during their annual food circuit would be forced to move or make adjustments to the changed conditions. Judging from the population density figures for this area, the migration cycle may not have been too extensive, centering around the three lakes and the river banks, and shifting markedly only in the fall for pinenut harvests. The sudden introduction of cattle would have seriously upset the ecology. It is significant that the Paiute of this area were among the first to begin raiding white herds and habitations.

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[137]

The Washo, on the other hand, lived in a territory that comprised four life zones, Alpine, Aspen, Pinyon and Artemisian. A depletion in the Artemisian zone due to grazing might be partially compensated by greater dependence on other life zone sources and by utilization of white settlements as a food source.

Washo NT20
Achumawi NS5

	Yo	KL	KH	Kla	Yo	Ya	Pa	Wa	Ac	So	Tg	Wi	El	AS	
Miscellaneous Plant Foods															
*471. "Usas" or reed sugar (pikavi)	-	+	+	+	+	°	°	-	-	°	-	-	-	-	262
471a. Obtained from neighboring area	+	-	-	-	-	+	+	-	-	°	-	-	-	-	222
472. Boiled	-	-	-	-	-	-	-	-	-	-	-	-	-	-	251
473. Dried and beaten	+	+	+	+	+	+	+	-	-	-	-	-	-	-	252
474. Willow-sap sugar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
475. White pine pitch as sugar	-	+	+	+	+	+	+	-	-	-	-	-	-	-	
477. Pikes pitch as sugar	+	+	+	+	+	+	+	-	-	-	-	-	-	-	
478. Chewing gum	+	+	+	+	+	+	°	-	-	-	-	-	-	-	
479. From plant root	+	+	+	+	+	+	°	-	-	-	-	-	-	-	
480. Rabbit-brush root	+	+	+	+	+	+	+	-	-	-	-	-	-	-	
481. Rabbit-brush bark	+	+	+	+	+	+	+	-	-	-	-	-	-	-	
482. Pitch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
482a. Berries dried	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
482b. Roots dried and stored	+	+	+	+	+	+	-	-	+	+	+	+	+	+	
Other Plants and Seeds Used															
*482c. Yellow cress (atsa)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482h. Sunflower (shhpi)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482h. Sunflower (pasi)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482c. Sunflower (shi)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
482d. Sunflower (kwainka)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
482e. Sunflower (kwaipasi)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482f. Pinkweed (kukwa)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482g. Sego lily or painted cup (tapavagi)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482h. Sego lily or painted cup (seamsh)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482i. Saltbrush (shhi)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482j. Rabbit brush (tavisigup)	+	°	+	+	+	+	+	-	+	+	+	+	+	+	
*482k. Rabbit brush (sigup)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482kh. Rabbit brush (mogohtsigi)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482m. Ingbone (milkweed) (ethsut)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482n. Sand grass (wai)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482o. Blazing-star (kuhe)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482p. Wild tobacco (paivame)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482q. Sorrel (atsa) paste	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482r. Bulrush or tule (siave)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482s. Cattail (toe)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482t. Spike rush (pamsiwe)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482u. Bulrush or tule (avi)	+	+	+	+	+	+	-	-	+	+	+	+	+	+	
*482v. Ingebrush (somava)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482w. Saltbrush (wasin)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482x. wasai	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482y. wasaisigi	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*482z. kiavi	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*484. Joint fir (tsadegi)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*484a. saiagava	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*484b. Indian balsam (tsoa)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*484c. wata	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*484d. wada	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*484e. pagé	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*484f. tsagagi	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*484g. tsava	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*484h. tsvasi	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*484i. Indian potatoes (sumsa?) (sego or bigo)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
*484j. Indian potatoes (apatsé)	+	+	+	+	+	+	+	-	+	+	+	+	+	+	
Gathering Implements															
*485. Digging stick (pave)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
486. Point one end	+	+	+	+	+	+	+	+	+	+	+	+	+	+	232

[P. 375]

14:Stewart E-5 (1936-1938)1944 NR13 Northern Paiute NR13
Washo NT20

WASHO–NORTHERN PAIUTE PEYOTISM

A Study in Acculturation

BY
OMER C. STEWART

HISTORICAL BACKGROUND

The Peyote Plant

Peyote (*Lophophora williamsii* Lemaire), a small, spineless cactus, grows from a carrotlike root. Its hemispherical top surface, grayish green in color, shows an inch or two aboveground and is divided into small segments. From each segment protrudes a minute tuft of hairlike fibers which in the depressed center of the top have the appearance of matted fuzz. Although all parts of the plant are at times used, the dome-shaped top is usually cut (leaving the root to send out small new shoots) to become the "peyote button" when dried.

Since the natural habitat of the peyote cactus is limited to the valley of the Rio Grande below Deming, New Mexico, and the plateau desert country of northeastern Mexico, Indians must travel to this area or have the dried buttons shipped to them. The vicinity of Laredo, Texas, is the principal source of supply for Indians in the United States.

Numerous chemical analyses have been made of peyote, revealing in young plants a single alkaloid, Pellotine ($C_{12}H_{19}O_3N$); in mature plants up to nine: Anhaline ($C_{12}H_{15}ON$), Anhalamine ($C_{11}H_{13}O_3N$), Mescaline ($C_{11}H_{17}O_3N$), Anhalonidine ($C_{12}H_{17}O_3N$), Anhalonine ($C_{12}H_{15}O_3N$), Lophophorine ($C_{13}H_{17}O_3N$), Pellotine, Anhalinine, and Anhalidine. Lophophorine is an oily, colorless liquid; the other alkaloids can be crystallized. These alkaloids fall into two classes, the strychnine-like and the morphinelike, somewhat antagonistic in action, which might account for the different stages of intoxication experienced. Different chemical composition of plants and opposing action of alkaloids, plus variations in susceptibility of the individual users, complicate the physiological problems connected with peyote eating.[1]

Most scientific investigators have pronounced peyote both non-habit-forming and innocuous as generally used, yet they have not found it of real therapeutic value. The euphoria it produces, judging from controlled clinical experiments[2] and native testimony, is usually accompanied by a preliminary feeling of exhilaration followed by a state of lassitude, without, however, inducing sleep. In this latter condition, it is often impossible to resist the impulse to vomit, without being followed, however, by sickness. Sensory hallucinations, especially visual, usually accompany the secondary stages of intoxication. More often seen with the eyes closed, the visions are extremely variable and unpredictable, but color hallucinations are most common.

The early Spanish explorers in Mexico observed the ceremonial use of peyote and mentioned its intoxicating property. Sahagun in 1560 was the first to write about peyote, and Hernandez in 1638 described it botanically. Hijar y Haro (p. 687) lists fourteen authors who wrote of peyote in Mexico before 1800. From 1894 to 1902, Lumholtz gave the first modern ethnographic accounts of its use in Mexico among the Huichol and Tarahumara. At about the same time, Mooney published

[1] Summarized from La Barre, 139–140. [2] Guttmann, 1936, 203–221.